

***Fletcher, Heald & Hildreth, P.L.C.***  
***1300 North 17<sup>th</sup> Street 11<sup>th</sup> floor***  
***Arlington VA 22209***  
***703-812-0400 (voice)***  
***703-812-0486 (fax)***

MITCHELL LAZARUS  
703-812-0440  
LAZARUS@FHHLAW.COM

October 24, 2005

Ms. Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street SW  
Washington DC 20554

**Re: RM-11043, *More Flexible Antenna Rules for the 10.7-11.7 GHz Band***  
***Ex Parte Communication***

Dear Ms. Dortch:

On behalf of FiberTower Corp. and pursuant to Section 1.1206(b)(2) of the Commission's Rules, I am electronically filing this letter to report an oral *ex parte* communication in the above-referenced docket.

On Friday, October 21, Keith Kaczmarek and Tarun Gupta of FiberTower Corporation and I met with Cathleen Massey, Brian Wondrack, Uzoma Onyeije, and (by telephone) Stephen Buenzo of the Wireless Telecommunications Bureau.

We summarized the elements of FiberTower's pleadings in the docket. A copy of our presentation outline is attached.

Please do not hesitate to call with any questions.

Respectfully submitted

Mitchell Lazarus  
Counsel for FiberTower Corp.

cc: Meeting participants

The background of the slide is a light blue image. On the right side, a person wearing a white hard hat and a dark long-sleeved shirt is bent over, drawing on a chalkboard. The chalkboard has a diagram of a tower with a horizontal arm and a vertical line, and the number '8' is drawn on it. The text on the left is in a dark blue font.

## **FiberTower Corporation**

Petition for Rulemaking (RM-11043)  
and Request for Waiver (DA 05-114)  
To Allow 2 Foot Antennas in the  
10.7-11.7 GHz Fixed Service Band

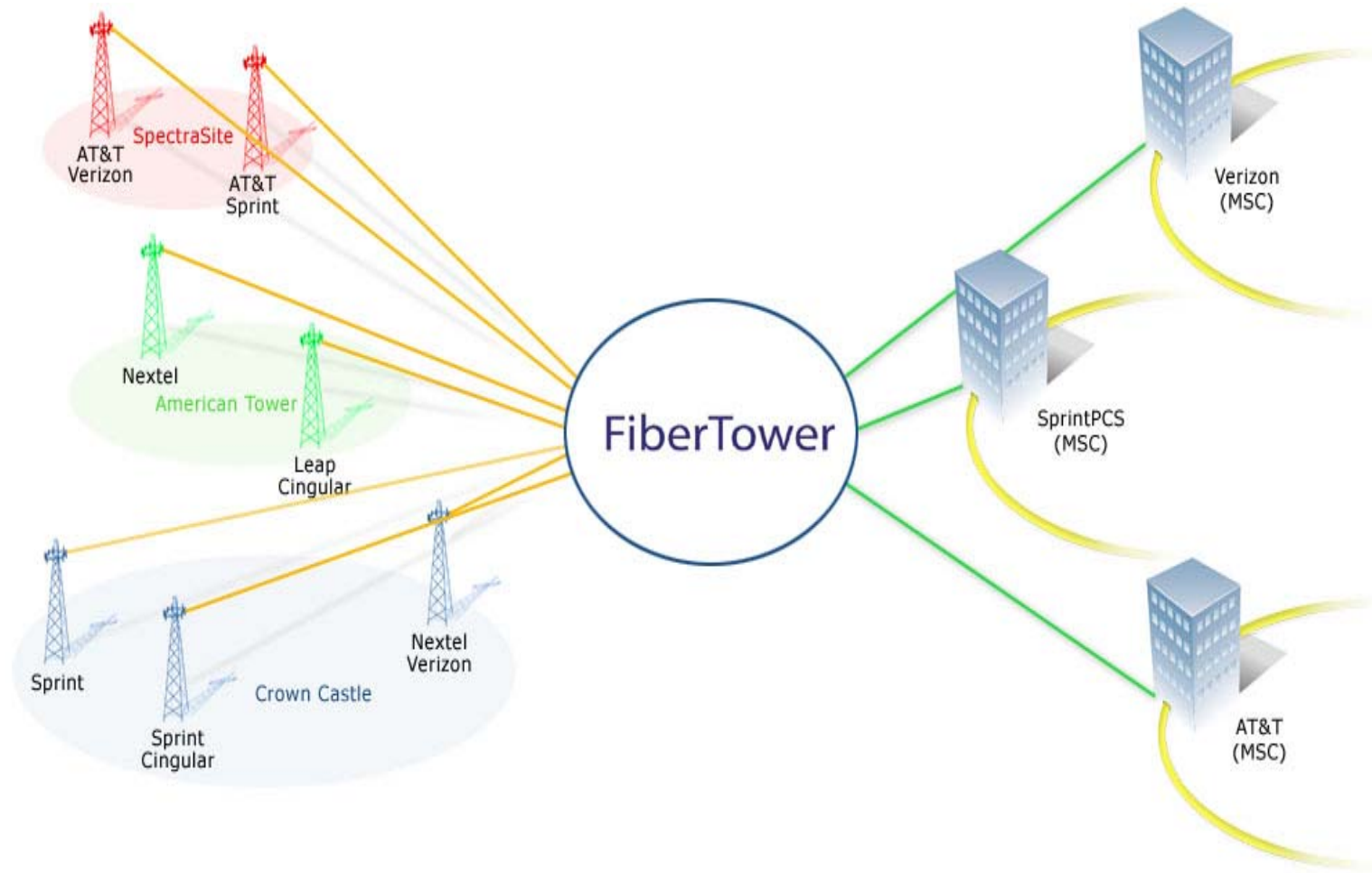
**October 21, 2005**

# About FiberTower – Investors



FiberTower is partnered with the top tower operators in the U.S.

# About FiberTower – What we do



FiberTower uses licensed point-to-point microwave to connect wireless cell towers

# Nature of Request



- Present technical rules at 10.7-11.7 GHz can be satisfied only with a 4-foot antenna\*
- May 26, 2004 : FiberTower filed a Petition for Rulemaking to allow 2-foot antennas (RM-11043)
  - proposed rules put any coordination burden on the 2-foot antenna user
  - 2-foot antennas recently allowed in 10 GHz band
- Several comments in support of 2-foot antennas; one in opposition (Satellite Industry Association)
  - FiberTower amended its proposal to accommodate SIA
- Oct. 22, 2004: FiberTower filed a request for waiver pending rulemaking (DA 05-114)

\* One company recently claimed compliance with a 3-foot antenna.

# Advantages of 2-Foot Antennas



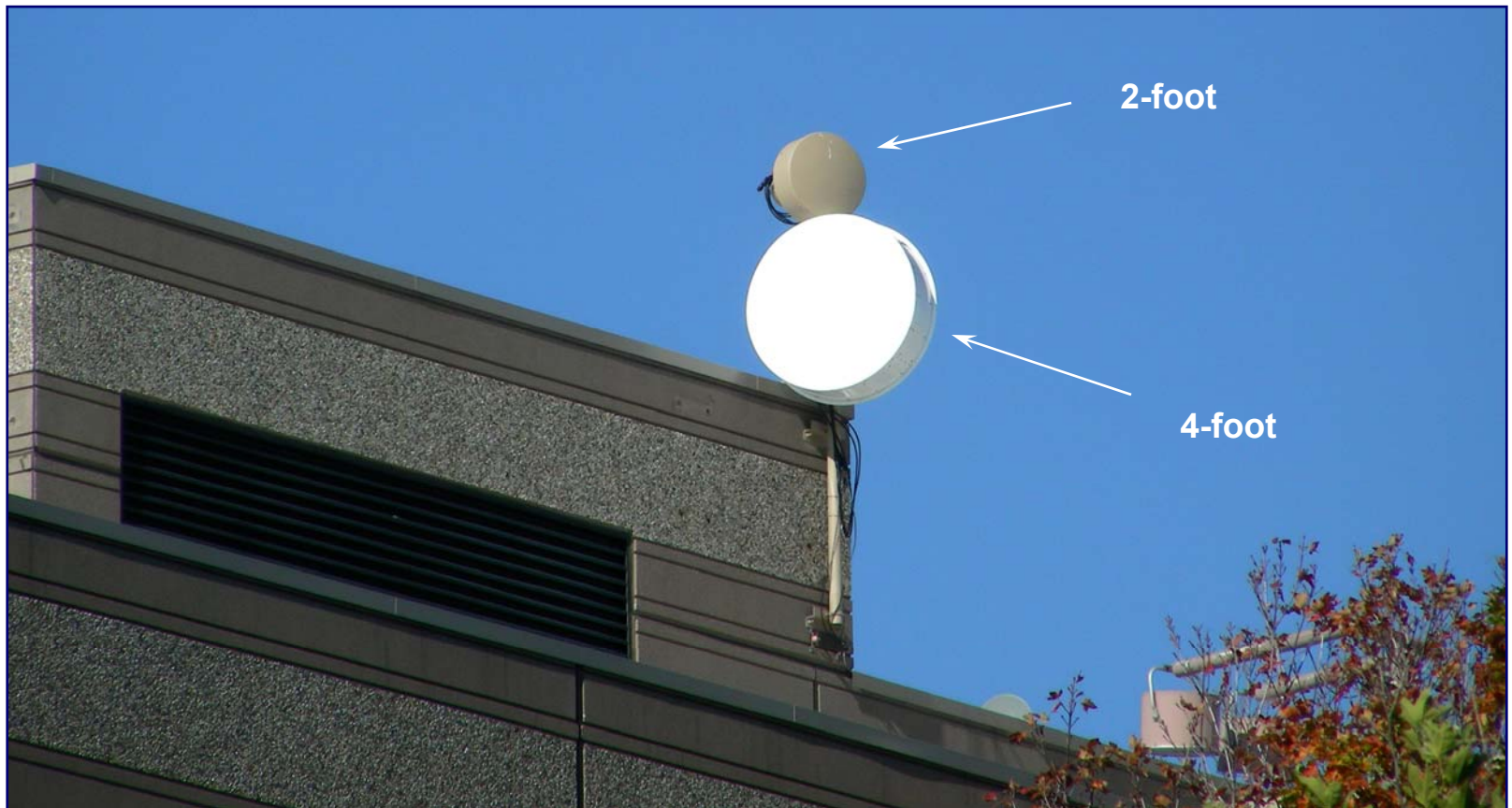
- 1/3 the cost, 1/4 the weight, 1/4 the area of four-foot antennas



# Advantages of 2-Foot Antennas



- Ideal for all areas (including residential)
  - far less obtrusive than 4-foot antennas
  - less structural support needed





# Advantages of 2-Foot Antennas



- First- and last-mile delivery to locations otherwise impractical for radio
- Sample applications:
  - cellular backhaul
  - backhaul for broadband delivery (Broadband over Power Line, Wi-MAX, Fiber-to-the-Curb, Advanced Wireless Services)
  - broadband Internet access for schools, businesses, apartment buildings
  - interconnection of industrial campuses
- FiberTower has encountered well over a hundred locations that can accept a 2-foot 11 GHz antenna but not a 4-foot
  - for examples, see *ex parte* filing of June 24, 2005





- Compatibility with local zoning, homeowners' associations, etc.
- More efficient use of 10.7-11.7 GHz spectrum
- Competition with fiber and other broadband delivery
- Lower costs to end users
- Access to locations not available to large antennas
  - esp. rooftops and towers with space or weight limitations
- Reduce pressure on other Fixed Service bands
  - 11 GHz is suitable for long links (unlike 70/80/90 GHz)
- Easier relocation of Fixed Service licensees displaced by new satellite operations

# Proposed Coordination Rules



- *FiberTower's proposed rules ensure that no other spectrum user can be disadvantaged by a 2-foot antenna*

- Details:
  - A 2-foot antenna user may object to a coordination (a) only if it predicts received interference, and (b) only to the extent a 4-foot antenna user could object.
  - An applicant for a 4-foot antenna or a Fixed Satellite Service earth station that predicts received interference from a 2-foot antenna user can require the 2-foot user to reduce the predicted interference to the levels predicted from a 4-foot antenna.

# Comments in Support of Rulemaking



- Cingular Wireless
  - mobile telephone provider
- Comsearch
  - specializes in spectrum management of terrestrial microwave, satellite, and mobile telecommunications systems
- NextWeb, Inc. (now Covad)
  - uses licensed microwave for redundant wireless backbones and to deliver high-speed network traffic
- Alcatel
  - leading manufacturer of microwave radio products
- Harris Corporation
  - international communications equipment company
- Wireless Communications Association International
  - trade and professional association for the wireless broadband industry
- Fixed Wireless Communications Coalition
  - coalition of companies, associations, and individuals interested in terrestrial fixed microwave communications

# One Comment Opposed



- Satellite Industry Association: more use of the 11 GHz band could hinder coordinating new earth stations
- Response:
  - satellite applications in the band are limited by rule – fewer than 140 earth stations nationwide
  - SIA opposes efficient use of the spectrum
  - FiberTower agreed to a change in proposed rules to better protect earth stations

# Proposed Waiver Conditions



- Waiver subject to the outcome of the rulemaking
  - if rules are not adopted, licensee may have to retrofit or remove antennas to achieve compliance
- FiberTower will limit installations under the waiver to 500 units per year
  - and will maintain records of licensee, call sign, and location

# Alcatel Technical Study



- Alcatel independently studied 22 distinct cases of interference potential (varying path length, off-angle discrimination, etc.)
- Findings:
  - two-foot antennas *reduce* the potential for harmful interference (due to limited path lengths)
  - at some angles, maximum of *0.1 dB* increase in interference into the environment (negligible)
  - at all other angles, *decreased* interference potential into the environment

Alcatel North America, filed September 7, 2004

# 11 GHz Band Is Ideal for Linking to Cell Towers



- 11 GHz is underutilized – 9% of all Fixed Service links
- There is a need for a medium path length, high capacity, low profile solution

Range	Band	Typical Path Length	Maximum Channel Capacity (T1's)	Minimum Dish Diameter	Typical Weight, incl. mount
Long (over 15 mi.)	4 GHz	20+ Miles	28+	8 Ft	500 lbs
	6.1 GHz	20+ Miles	84	6 Ft	360 lbs
	6.7 GHz	20+ Miles	28	6 Ft	360 lbs
Medium (5-15 mi.)	10 GHz	10 Miles	16	2 Ft	33 lbs
	11 GHz	15 Miles	84	4 Ft	126 lbs
	<b>11 GHz</b>	<b>8 Miles</b>	<b>84</b>	<b>2 Ft (proposed)</b>	<b>33 lbs</b>
Short (under 5 mi.)	18 GHz	4 Miles	84+	2 Ft	33 lbs
	23 GHz	2 Miles	84	1 Ft	21 lbs



# Conclusion



- Both the rulemaking and the waiver will :
  - benefit the public (easier access, better aesthetics, reduced costs)
  - increase competition
  - improve spectrum efficiency
  - increase spectrum use
- No disadvantage to any spectrum user
- No risk to the Commission
  - waiver will be subject to outcome of rulemaking
- The Commission should grant the waiver promptly and proceed with the rulemaking



# Thank you!

- FiberTower Corporation

Mitchell Lazarus  
Fletcher, Heald & Hildreth, PLC  
703-812-0440  
[lazarus@fhhlaw.com](mailto:lazarus@fhhlaw.com)